Small Business Innovation Research/Small Business Tech Transfer

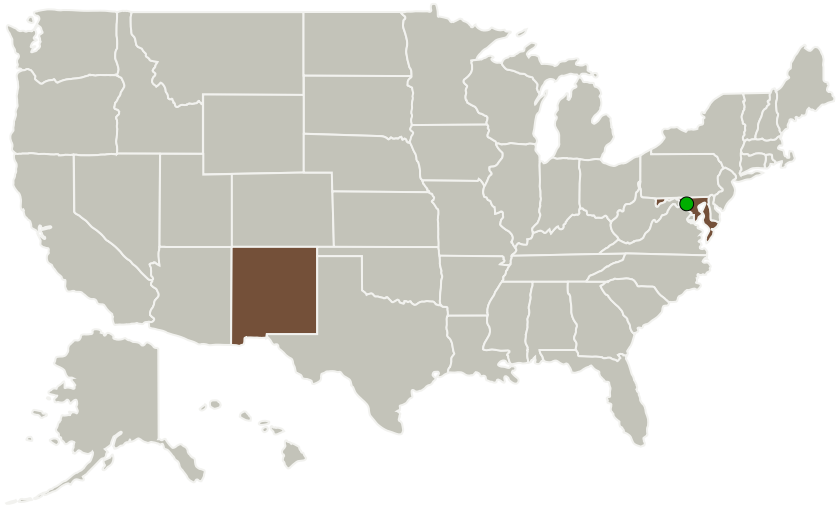
High heat flux Enhanced Acquisition and Transport system for Small spacecraft, Phase I

Completed Technology Project (2015 - 2015)

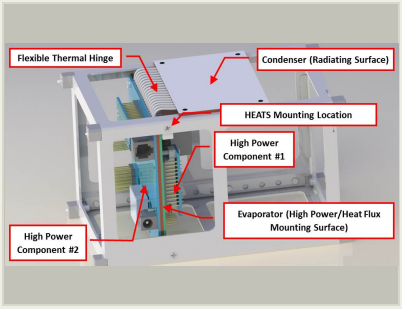
Project Introduction

Future small-spacecraft thermal engineers and integrators will contend with increasing spacecraft power and temperature variations resulting from challenging new missions in extreme environments. The LoadPath High heat flux Enhanced Acquisition and Transport system for Small spacecraft (HEATS) is an innovative, passive, two-phase thermal transport system that will help realize these missions of tomorrow. Unlike state-of-the-art thermal transport systems (e.g. heat pipes and loop heat pipes), our approach can mitigate higher heat loads and fluxes at a lower cost and mass while adapting to a wider-range of heat source/sink configurations.

Primary U.S. Work Locations and Key Partners



Organizations Performing Work	Role	Type	Location
LoadPath	Lead Organization	Industry	Albuquerque, New Mexico
Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland



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Primary U.S. Work Locations	
Maryland	New Mexico

Project Transitions

June 2015: Project Start

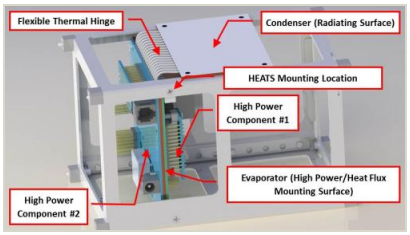
December 2015: Closed out

Closeout Summary: High heat flux Enhanced Acquisition and Transport system for Small spacecraft, Phase I Project Image

Closeout Documentation:

- Final Summary Chart Image*(https://techport.nasa.gov/file/139051)*

Images



Briefing Chart Image
High heat flux Enhanced Acquisition and Transport system for Small spacecraft, Phase I *(https://techport.nasa.gov/image/136036)*

Organizational Responsibility

Responsible Mission Directorate:
Space Technology Mission Directorate (STMD)

Lead Organization:
LoadPath

Responsible Program:
Small Business Innovation Research/Small Business Tech Transfer

Project Management

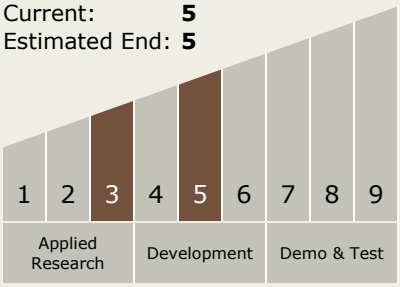
Program Director:
Jason L Kessler

Program Manager:
Carlos Torrez

Principal Investigator:
Derek Hengeveld

Technology Maturity (TRL)

Start: **3**
Current: **5**
Estimated End: **5**



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Technology Areas

Primary:

- TX14 Thermal Management Systems
  - TX14.2 Thermal Control Components and Systems
    - TX14.2.2 Heat Transport

Target Destinations

The Sun, Earth, The Moon, Mars, Others Inside the Solar System, Outside the Solar System